UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

October 7, 2008

REPLY TO THE ATTENTION OF:
SR-6J

Via Certified Mail
Return Receipt Requested

Thomas Steib
Detrex Corporation
1100 N. State Road
Ashtabula, OH 44004

RE: Detrex Source Control Operable Unit - Fields Brook Superfund Site - Ashtabula, Ohio
Docket No. - V-W-98-C-450

Dear Mr. Steib:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the "Sediment Investigation/Removal Work Plan DS Tributary" (Work Plan), the draft Operations and Maintenance Plan (O&M Plan), and the draft Health and Safety Plan (HASP) for the Detrex Operable Unit and the DS Tributary portion of the Fields Brook Superfund Site in Ashtabula, Ohio. U.S. EPA's comments on the documents are, as follows:

GENERAL WORK PLAN COMMENTS

1. The Work Plan indicates that previously remediated areas of the DS Tributary are not included in the present Work Plan. However, during the summer of 2007 and this year, additional contamination was removed from the Fields Brook flood plain. The work plan should either explain why it is believed that the DS Tributary did not become recontaminated or propose investigations to demonstrate that the previously investigated areas, including downstream portions of the DS Tributary have not become recontaminated. In addition, newly found contamination in Fields Brook is significantly deeper than previously identified. Areas previously addressed may not have been sufficiently investigated, with cleanup actions insufficiently deep to address all contamination.

2. The Work Plan does not present a Conceptual Site Model (CSM) or hypothesis for the cause of the DS Tributary contamination that the Work Plan will investigate/validate by additional data collection (*e.g.*, mechanism for DNAPL migration). The Work Plan also does not present a review and analysis of the historical and recent data (August 2006) collected on the western portion of the Detrex property and in the DS Tributary, and the State Road area. The adequacy of the proposed investigation plan is very difficult to review without such a presentation and analysis of the data and an overall CSM.

3. Hand augering is not an effective method for DNAPL identification because stringers and pools of DNAPL could easily be overlooked, especially if the locations are spaced 30 to 50 feet apart. In contrast, trenching allows for accumulation and visual examination of DNAPL. The number

of exploratory trenches should be expanded. Where hand augering is to be used, the general approach should be logically tied to field screening results with follow-up trenching based on an indication of subsurface VOC contamination.

4. The proposed investigation does not appear to extend to the lowest elevation that dense non-aqueous phase liquid (DNAPL) has been found within the Detrex facility or within Fields Brook and the Fields Brook flood plain. Because of the contamination found within Fields Brook and the Fields Brook flood plain since August 2007, investigation is warranted at the lowest elevation of one or more of the following areas as applicable: (1) the elevation where product has been found in the Fields Brook flood plan, (2) the lowest elevation at which any of the DNAPL extraction wells are set, and (3) the lowest elevation at which DNAPL was previously identified. The purpose of investigation to this elevation is to determine the presence or absence of DNAPL and potential migration pathways at those elevations.

5. The scales of Figures 2A and 2B should be verified (see Specific Comments No. 3 and 6 below). Additionally, the north arrow on Figure 2A is pointing west, not north.

6. The Work Plan should be revised to identify the proposed source for the backfill material.

SPECIFIC WORK PLAN COMMENTS

7. **Section 1, Page 1-1, Paragraph 2:** The text states that DNAPL "was not observed in any piezometers." Neither the text nor figures indicate the locations of these piezometers.

8. **Section 1, Page 1-1, Paragraph 3**: The text states that "samples will be collected at least three feet into the clay underlying sediment and floodplain soils and deeper in areas where structures penetrate the underlying clay." The text does not explain why the sampling depth of 3 feet into the clay soils was chosen, either based on previous sampling data and/or the 2001 remedial actions. Note the general comment regarding the determination of an appropriate investigation depth.

9. **Section 3, Page 3-1, Paragraph 1**: The text states that the previously remediated segment of the DS Tributary is approximately 200 feet west of State Road. However, Figure 2A shows the segment location as approximately 630 feet north of State Road. The discrepancy between the text and the figure regarding the distance and direction of the remediated segment should be resolved.

10. **Section 3.1, Page 3-1, Paragraph 3**: The text does not state how the hand auger locations will be chosen. The text should be revised to provide the rationale for the selection of the hand auger locations. Specifically address what confidence the proposed spacing provides?

11. **Section 3.1, Page 3-1**: The text indicates that 10 soil samples will be collected and submitted for analytical testing. The text should be revised to provide the rationale used to determine which soil samples will be submitted for laboratory analysis. The number of samples to be collected should be adjusted appropriate to the increase in the lateral and vertical extent of investigation.

12. **Section 3.2, Page 3-1**: There is a discrepancy between the text, which indicates that 10 exploratory trenches are to be excavated along the DS Tributary at approximately 100-foot intervals, and Figures 2A and 2B, which show that the exploratory trenches are to be excavated at

approximately 140-foot intervals, with some intervals approaching 175 feet based on the scales of the figures. This discrepancy should be resolved. In addition, neither the text nor the figures show the location of the proposed stockpile for DNAPL soils. The proposed stockpile location should be indicated.

13. **Section 3.2, Page 3-1**: The DS Tributary should be diverted to allow for trenching within the channel.

14. **Section 3.3, Page 3-2, Paragraph 1**: The text states, "Sediment samples will be submitted from hand auger locations." The text should clarify whether the "hand auger locations" are the hand auger samples discussed in Section 3.1 or hand auger samples collected from the exploratory trench excavations. Additionally, the text should discuss how samples will be collected from the trench excavation. Finally, the text should explain the lateral and vertical locations of the headspace samples to be collected.

15. **Section 3.3, Page 3-2, Bullets:** If the sample contains DNAPL, it may not be appropriate to just bag the sample. The DNAPL could destroy the bag and lead to worker exposure.

16. **Section 3.3, Page 3-2**: How will the PID data be used to direct field activities? Will the headspace readings determine what samples are to be sent for analysis? If the sample from the bottom of an excavation has the highest headspace reading of the lot, will the excavation depth be extended?

17. **Section 3.5, Page 3-3**: Because PCBs were seen in Fields Brook downstream of the DS Tributary, samples should also be analyzed for PCBs.

18. **Section 3.8, Page 3-3:** If samples contain DNAPL, additional sample packaging requirements for "high hazard samples" may apply and a "heads up" to the laboratory would be warranted. Note that the chlorinated DNAPL will eat through plastic bags and bubble wrap. Please check DOT regulations.

19. **Section 3.9, Page 3-4**: The fourth point of this section presents an incomplete thought. This point should be completed.

20. **Section 3.11, Page 3-5:** The text states that the diversions will remain in place until data is received and that an operator will remain at the site 24-hours a day to man the pump(s). What is the anticipated turnaround time on the samples?

21. **Section 4, Page 4-1, Paragraph 1**: The text states that stream diversions will be necessary to complete the excavations but does indicate which excavations (the exploratory trench excavation or the removal excavations, or both). If this statement applies to all excavations conducted, it is unclear why sampling cannot be conducted in the stream channel as explained in Section 3.2. The text should be revised to indicate which excavations and explain why sampling cannot be conducted in the stream channel. In addition, Section 3.2 should be revised as needed if sampling cannot be conducted in the stream channel.

22. **Section 5**, Page 5-1: The text states that goal of the excavation is to remove liquid DNAPL. If that's the case, how will the sample results be used? The data should be used to verify that what is to remain is under the cleanup goals and to verify the correlation between "allowable concentrations" of VOCs and the presence/absence of product?

23. **Section 5.2, Page 5-2:** Ohio EPA should be contacted to ensure the acceptability of the contact water entering the Detrex treatment system. Detrex wouldn't want to put its NPDES permit in jeopardy.

24. **Section 6.2, Page 6-2**: This section is entitled "Equipment." However, no equipment is discussed. Either the section should be retitled, or the section should discuss equipment.

25. **Section 6.4, Page 6-2, Paragraph 2**: The text states that water will be used to suppress dust from the stockpiles. The text should indicate the source of the dust suppression water.

26. **Section 8.1, Page 8-1**: The text should explain how often the interceptor trench will be monitored and whether samples will be collected on a regular basis for monitoring purposes.

27. **Section 8**.1, Page 8-1: A second interceptor trench should be considered for downstream on the DS Tributary. The DNAPL is often hard to find. Having a more downstream trench could help reduce the risk to the brook from material not found during investigations.

HASP - GENERAL COMMENTS

H1. The HASP does not include figures. However, many sections of the document refer to specific figures. Figures referred to in the text should be added to the HASP.

H2. The HASP does not mention health and safety requirements unique to this project location, specifically, the requirement to have an air-purifying acid-gas escape respirator available at all times because of the large amounts of chlorine stored at the Detrex facility and other nearby facilities. Similarly, the text does not mention the related chlorine release alarm system for the Detrex facility or neighboring facilities. The text should be revised as needed to discuss these issues.

H3. The HASP has numerous issues, such as undefined acronyms, inconsistencies, incorrect references to attachments and appendices, improper referencing, and inconsistencies between sections. Some example issues are listed below. The HASP should be completely and carefully reviewed to resolve all such issues and to eliminate all errors.

H4. **Section 5.1, Page 5-1**: The text lists the following chemicals of concern (COC): chloroform; hexachlorobutadiene; tetrachloroethene; trans-1,2-dichloroethene (DCE); and cis-1,2-DCE. No material safety data sheets (MSDS) are provided in the HASP for any of these chemicals. However, an MSDS is provided for 1,2-dichloroethane (DCA), which is not listed as a COC in the text. In addition, Section Two, Page 2-2, Field Screening and Sample Selection, Paragraph 1, states that tetrachloroethane is a COC. A complete list of COCs should be determined, the HASP should be revised to include MSDSs for all COCs, and the COCs discussed should be consistent throughout the HASP.

H5. **Section 6.3, Page 6-1**: The text states that "the results of daily instrument calibrations can either be logged on the form provided in Attachment C or in the field book." However, the HASP does not have an Attachment C. The daily instrument calibration check sheets are provided in Appendix D.

H6. The text and the listed Standard Operating Procedures and Safety Management Standards are sometimes inconsistent. For example, the text lists URS SMS 026, but the Safety Management Standard is listed in Appendix B as URS 26.

HASP - SPECIFIC COMMENTS

H7. **Section Two, Page 2-1**: Figures 2A and 2B are discussed in the text but are not provided. These figures should be included in the HASP.

H8. **Section Two, Page 2-2**: This section is entitled "Soil and Groundwater Sampling." However, the section does not discuss groundwater sampling activities. The section should either be retitled or revised to discuss groundwater sampling activities.

H9. **Section Two, Page 2-2, Field Screening and Sample Selection, Paragraph 1**: The text states that "the sample screening will be conducted on the samples using a photoionizatioon detector (PID) with a 10.6 eV lamp." The text should be revised to indicate that a PID with a 11.6-eV lamp will be used because one of the COCs, tetrachloroethane, has a ionization potential of 11.10 eV (see the tetrachloroethane MSDS provided in Appendix A).

H10. **Section Five, Page 5-2, Paragraph 4**: The text states, "Inhalation of vapors or particulates during the site activities will be minimized by air monitoring and the use of engineering controls, and respiratory protection will be used if action levels described in Section 9.0 are exceeded." The text should be revised to correctly indicate where the action levels are discussed because they are not discussed in Section 9.0. In addition, Appendix A discusses exposure limits, but it is not clear if the exposure limits are the action levels. If the exposure limits are the action levels, the text should be revised to state that this is the case.

H11. **Section Five, Page 5-4, Paragraph 2**: The text states, "The URS SMS 018 *Heat Stress*, Appendix F, will be implemented to address this hazard." The HASP does not have an Appendix F. URS SMS 018 is listed in Appendix B. The text should be revised to refer to Appendix B.

H12. **Section 9.1, Page 9-1, Paragraph 3**: The text states, "The SSO will verify that all site visitors sign the visitors' log." This statement should be added to Section 5.3.14 (Site Access) in order to clarify site access requirements.

H13. **Section Twelve, Page 12-1**: The text states, "In the event of a fire or medical emergency, the emergency numbers identified on Table 12-1, Emergency Contacts, in Appendix C can be called for assistance." The text should also refer to the emergency hospital and give directions from the site to the emergency hospital.

H14. **Section Twelve, Page 12-4**: The Ashtabula County Medical Center telephone number is listed as "440-997-6600." However, according to the website for the Ashtabula County Medical Center, (http://www.acmchealth.org), the telephone number is 440-997-2262. The telephone number should be verified and updated as needed throughout the HASP. This comment also applies to Section Twelve, Page 12-7, and Table 12-1.

H15. **Table 7-1**: In this table, a supplied-air respirator is listed as a component of Level D Modified personal protective equipment. However, this component is not listed in Section 7.1 (Personal Protective Equipment Use). The supplied-air respirator should be added to Section 7.1.

O&M PLAN - GENERAL COMMENTS

O&M1. The headings at the beginnings of each section should be checked for errors. For example, the last three sections have incorrect section numbers and headings.

O&M2. The title of this document is misleading because the document includes sections that describe proposed future activities, both investigative and operational. The document title should be changed to reflect the fact that the document also discusses investigative activities. Alternately, the proposed investigational work could be broken out into a separate document.

O&M3. U.S. EPA is concerned that there is not sufficient control of DNAPL and associated contaminated groundwater at the Detrex facility. This will be a major topic of the Five Year Review. Because borings are not sufficient to assess DNAPL presence/absence, additional investigative work, including trenches into the clay, should be discussed to assess boundary control.

O&M PLAN - SPECIFIC COMMENTS

O&M4. **Section 2.1, Page 2-1, Paragraph 1**: The text states that 9 of the 12 recovery well are operational. The text should indicate which wells are operational and which wells are not.

O&M5. **Section 2.1, Page 2-1, Paragraph 3**: The text states, "Between October 2002 and September 2003, two wells were capped and taken off-line due to short-circuiting of injected air (RW-2 and RW-11) or excessive sediment production (RW-4 and RW-10)." This sentence suggests that *four* wells were "capped and taken off-line" instead of two wells as stated. This sentence should be rewritten as needed to resolve this discrepancy. If the text should refer to four wells, there is a another discrepancy between Paragraph 1, which indicates that three wells are not operational, and Paragraph 3, which may be rewritten to state that four wells are not operational. This discrepancy should also be resolved.

O&M6. **Section 3.1.4, Page 3-2.** The proposed investigation does not appear to extend to the lowest elevation that dense nonaqueous-phase liquid (DNAPL) has been found either within the Detrex facility or within Fields Brook and the Fields Brook flood plain. Because of contamination that has been found within Fields Brook and the Fields Brook flood plain since August 2007, investigation is warranted at the lowest elevation of one or more of following areas as applicable: (1) the elevation where product has been found in the Fields Brook flood plain, (2) the lowest elevation at which any of the DNAPL extraction wells are set, and/or (3) the lowest elevation at which DNAPL was previously identified. The purpose of investigation to this elevation is to determine the presence or absence of DNAPL and potential migration pathways at those elevations.

O&M7. **Section 3.1.4, Page 3.2.** The proposed investigation should not only serve to identify areas that have the potential to extract DNAPL, but also try to gather VOC data to support Detrex's contention that DNAPL is not moving beyond the known area of accumulation. See comments on Figure 2 below.

O&M8. **Section 3.1.5, Page 3-2.** The text does not clearly indicate the locations of the proposed small diameter product recovery wells, and none of the figures included with this document show these locations. The proposed locations of the small-diameter product recovery wells should be shown on a figure.

O&M9. **Section 3.15, Page 3-2.** The current proposal is that the small-diameter wells will be pumped monthly. If there is significant recovery from a well(s), the frequency of extraction should be increased.

O&M10. **Section 3.1.6, Page 3-3.** Additional information regarding the proposed product recovery trench should be provided. For example, the text should indicate if the trench will have a pipe at the bottom, how DNAPL will be recovered from the sump, and how long the trench will be.

O&M11. **Section 3.1.6, Page 3-3.** Establishing a containment cell at the facility is problematic because it is not an element of the existing remedy. While one could argue that the recovery trench approach is basically an expansion of the extraction well concept, the current remedy does not envision a containment structure for waste. Detrex has expressed concern about the cost of disposing of spoils but has provided no supporting information. Construction of a containment cell at the facility would require a modification of the remedy.

O&M12. **Section 3.3.1, Page 3-4.** By evaluating the volume of water being removed daily from the Southern Area interceptor trenches and the concentration of VOCs in the collected water, one can draw some preliminary conclusions about the presence or absence of chlorinated DNAPL. The Fields Brook PRPs have noted that with the volume of water removed from the trenches and the concentration of VOCs seen in the easternmost trench, it is likely that product is entering the trench. What is Detrex's conclusion regarding the likelihood that DNAPL is entering the system? Note that this is an issue for discussion. It does not need to be addressed within the O&M Plan.

O&M13. **Table 1.** Please expand the table to be clear on the pumping and sampling requirements for all collection points. The text notes the pumping rate and duration for the southern area interceptor trenches, but the info is not included in the table. The pumping frequency for the North Sewer sump is not identified.

O&M14. **Table 1.** MW06S should also be included in the routine sampling program.

O&M15. **Table 1.** U.S. EPA is concerned that DNAPL and associated groundwater contamination could be moving beyond the current collection system. U.S. EPA will be evaluating this concern as part of the Five Year Review. Detrex should check the availability of other monitoring wells in the area to expand its database. Wells to the north by the landfills should be checked for VOCs. Are there are any old Occidental Chemical wells remaining that might be useful? If the DNAPL is desiccating the clay, how much contamination could be entering the groundwater below the facility? There seem to be only three deep wells identified (MW02S, MW17D, and MW18D – all to the south of the main DNAPL area), and all three are only to be checked for elevations and DNAPL thickness. We need these three wells and any other available deep wells to be sampled for VOCs.

O&M16. **Figure 4.** Additional DNAPL delineation borings should be placed beyond the Detrex property boundary to ensure that DNAPL is not moving beyond the property. Locations should include spots just to the north of the DS Tributary Interceptor trench (to ensure that

the trench is deep enough) and just north of the known area of DNAPL (north of MW05S, north of the treatment building and north/northwest of MW06S).

O&M17. **Figure 4.** When U.S. EPA and Detrex representatives met in Cleveland to discuss DNAPL delineation, there was also discussion about the lack if information within the facility area. Delineation borings should also be included within the operational area of the facility.

Please contact me at 312-353-6564 to arrange a conference call or meeting to discuss the resolution of these comments.

Sincerely,

Terese A. Van Donsel
Project Manager
Superfund Division
U.S. EPA Region 5

cc: P. Felitti /EPA-R5
R. Williams / OEPA
W. Earle / SulTRAC
T. Doll / Detrex
R. Currie / Detrex
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Site File - Fields Brook / Detrex